REMARKS

Claims 1-4 and 9-14 are pending in this application. By this Amendment, claims 1, 2, 9 and 10 are amended and claims 5-8 and 15-20 are canceled without prejudice to or disclaimer of the subject matter recited therein. No new matter is added. Reconsideration in view of the above amendments and following remarks is respectfully requested.

Applicants appreciate the courtesies shown to Applicants' representatives by Examiner Motsinger and Examiner Wu in the August 7, 2007 personal interview. Applicants' separate record of the substance of the interview is incorporated into the following remarks.

The Office Action objects to the drawings asserting that the phrase "plurality of planes," recited in claims 2 and 10 must be shown in the drawings. Applicants respectfully assert that the plurality of planes is shown in Fig. 1. Support for such planes is also found in the specification, for example, at least at paragraphs [0045]-[0049]. Thus, Applicants respectfully request that the Examiner withdraw the objection to the drawings. Nonetheless, as suggested by Examiner Wu, claims 2 and 10 are amended to recite --blocks-- instead of "planes."

The Office Action rejects claims 1-4 and 9-14 under 35 U.S.C. §112, first paragraph and second paragraph, asserting that the use of "selector plane" is inconsistent with the related art, Fan (U.S. Patent No. 6,400,844) and MacLeod (U.S. Patent No. 5,778,092). Applicants respectfully traverse the rejection. Specifically, Applicants' use of a selector plane is supported in Fan in the abstract and at col. 1, lines 23-32.

Further, the Office Action asserts that the specification describes the use of binary compression technique (CCITT G3/G4 or JBIG2) to compress the gray scale data. As discussed by Examiner Wu during the interview, such compression technique is only an example of a lossless compression in facsimile applications. One having ordinary skill in the art would know how to apply lossless compression to high spatial frequency gray scale data.

Finally, the Office Action asserts that one having ordinary skill in the art would not know how to use binary compression techniques to compress gray scale image data. Applicants respectfully traverse these rejections. Applicants respectfully assert that one having ordinary skill in the art (in light of the Cuciurean-Zapan reference (U.S. Patent No. 6,343,159)), would know that the operation assumes that look-up tables can be generated during a training operation for each of various different types of half-toning methods. Thus, Applicants respectfully request that the Examiner withdraw the 35 U.S.C. §112 rejections.

The Office Action rejects claim 4 under 35 U.S.C. §101 asserting that claim 4 is directed to non-statutory subject matter. To obviate this rejection, claim 4 is amended to recite "a computer readable storage medium that contains a program that stores the method of claim 1." Thus, Applicants respectfully request that the Examiner withdraw the 35 U.S.C. §101 rejection.

The Office Action rejects claims 1 and 9 under 35 U.S.C. §103(a) as being unpatentable over Noh (U.S. Patent No. 5,917,952 in view of Fan (U.S. Patent No. 6,400,844); rejects claims 4 and 12-14 under 35 U.S.C. §103(a) as being unpatentable over Noh in view of Fan; rejects claims 2 and 10 under 35 U.S.C. §103(a) as being unpatentable over Noh in view of Fan and further in view of Lin (U.S. Patent Application Publication No. 2002/0076103); and rejects claims 3 and 11 under 35 U.S.C. §103(a) as being unpatentable over Noh in view of Fan and further in view of Kodidis, Eleftherios et al. "Nonlinear Adaptive Filters for Speckle Suppression in Ultrasonic Images," Signal Processing, v52 n3, August 1996, pages 357-372. Applicants respectfully traverse these rejections.

Noh and Fan, either individually or in combination, fail to disclose or suggest, <u>after converting the binary image data into gray scale image data</u>, segmenting the converted gray scale image data into a first plane having high spatial frequency gray scale image data and a

second plane having low spatial frequency gray scale image data, as recited in independent claim 1, and similarly recited in independent claim 9.

Noh, at col. 2, lines 24-64 discloses a method of compression involving a two level dithered image dithering a smooth image, undithering the image and then compressing the image for transmission. The method in Noh consists of storing or transmitting a lower resolution undithered multi-level image rather than a dithered bi-level image. Noh's compression method also discloses that a dithered bi-level image can be derived from the lower resolution multi-tone image. However, Noh fails to disclose or suggest any segmentation <u>before</u> compression of image data. Please see Fig. 1 and steps 102 and 104 of Noh.

The Office Action acknowledges that Noh fails to disclose submitting gray scale image data into a first plane having high spatial frequency gray scale image data and a second plane having low spatial frequency gray scale image data; and separately compressing the high spatial frequency gray scale image data in the first plane and the low spatial frequency gray scale image data in the second plane. The Office Action cites to Fan to cure these deficiencies.

Fan, at col. 5, lines 5-15 and col. 5, lines 24-30 discloses a detailed description of an MRC formatting of a pixel map. Fan discloses that a document format is typically comprised of a upper plane 12, a lower plane 14, and a selector plane 16. Fan also discloses that the upper plane 12 and the lower plane 14 may be compressed and stored using a lossy compression technique such as JPEG, while selector plane 16 is compressed and stored using a lossy compression format such as gzip or CCITT-G4. However, Fan fails to disclose or suggest <u>any segmentation after the conversion of binary image data to gray scale image data</u>. Thus, Fan fails to cure the deficiencies of Noh.

Therefore, Noh and Fan, either individually or in combination, fail to disclose or suggest <u>after converting the binary image data into gray scale image data</u>, segmenting the converted gray scale image data into a first plane having high spatial frequency gray scale image data and a second plane having low spatial frequency gray scale image data, as recited in independent claim 1, and similarly recited in independent claim 9.

In view of the above remarks, independent claims 1 and 9 define patentable subject matter. Claims 3-4 and 11-14 depend from independent claims 1 and 9 respectively, and are patentable for the same reasons, as well as for the additional features recited therein. Thus, Applicants respectfully request that the Examiner withdraw the rejections.

In view of the foregoing, Applicants respectfully submit that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-4 and 9-14 are earnestly solicited.

Should the Examiner believe that anything further is desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

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